openreach

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Suppliers' Information Note

For The Openreach Network

OPENREACH WHOLESALE EXTENSION SERVICE 155 (WES 155) AND WHOLESALE END TO END EXTENSION SERVICES 155 (WEES155)

Service & Interface Description

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1. Introduction

This Suppliers Information Note (SIN) describes the interface provided with Wholesale Extension Service 155 (WES 155) and Wholesale End to End Extension services 155 (WEES155). It also provides general information on the WES/WEES 155 Service and on some of the physical aspects of the NTE currently being deployed for new customer orders.

WES/WEES services are high speed, point-to-point data circuits that are permanently connected and available 24 hours a day, 365 days per year. WES services provide a secure link between a third-party customer Site and the Communications Provider's (CP's) network at a CP's Site. Openreach WEES provides a secure link between a third-party site and another third party site.

Any specific technology mentioned in this document is current as of today, however it may be subject to change in the future. Should the specification of the interface be changed, this will be notified by a new issue of this SIN. BT reserves the right to adapt technology to deliver WES/WEES as new developments are made. All services are delivered over an uncontended transmission path.

SPECIAL NOTICE

Openreach has formally notified the withdrawal from new supply of all WES WEES BES products up and including 1Gbit/s as from 1st June 2011 along with the removal of all modify options (Bandwidth upgrade, shift, re-site & rearrange) as from 1st June 2013

Openreach have notified End of Support as from 1 April 2018 for all WES WEES BES (up to and including 1Gbits). Please refer to Openreach briefing GEN061/14 (www.openreach.co.uk)

WES WEES BES 2.5Gbit/s and 10Gbit/s will remain available along with WES Aggregation

2. Service Outline

2.1 General

The WES/WEES 155 service element comprises a single uncontended transmission link between the sites and an NTE (Network Terminating Equipment) at each end of this link.

The services operate at 155,520 kbit/s (± 20ppm) and provide links between sites over radial distances of up to 25 km (see Figure 1). The actual fibre route distance will depend on the local physical circumstances and the BT plant configuration.

Further information is available from your Openreach Sales & Relationship Manager.

A schematic of the WES 155 service arrangement is shown in **Error! Reference source not found.**.

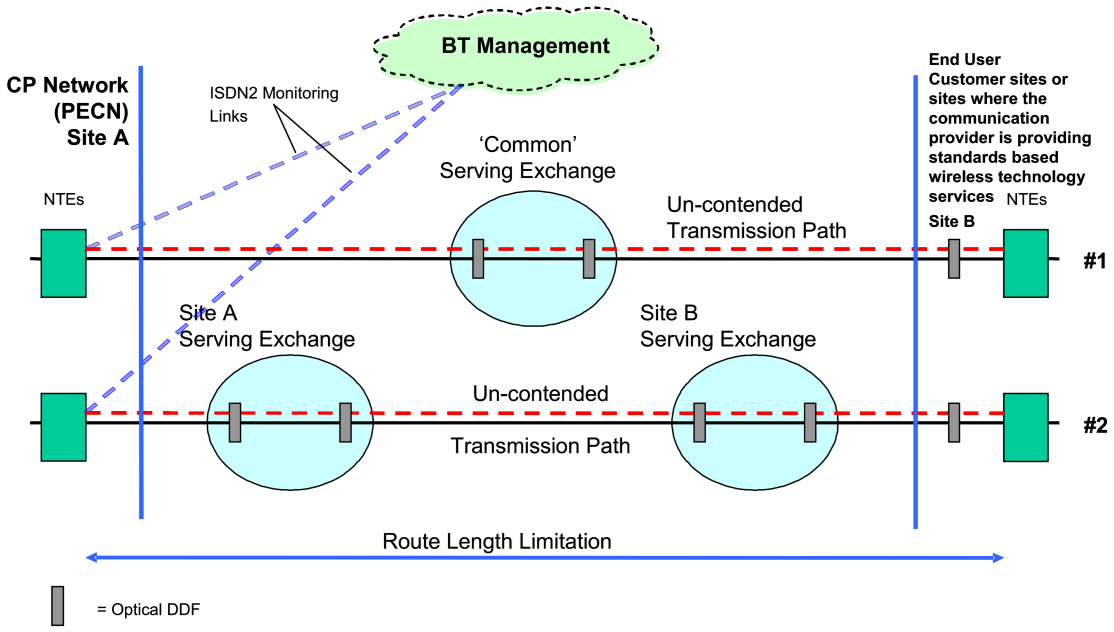

Figure 1 WES 155 service configuration

Note 1. **Error! Reference source not found.** depicts two separate circuit scenarios, not a combined service. The upper horizontal black line (#1 - NTE to NTE) represents a WES circuit where both ends have a common serving exchange. The lower line (#2) represents a circuit where the ends are served from different exchanges.

Note2. The service cannot be purchased as a point-to-point circuit directly connected between two 3rd party customer sites, whether or not the physical route is via a BT exchange. This diagram is using current technology for delivery, this is subject to change.

A schematic of the WEES 155 service arrangement is shown in **Error! Reference source not found.**.

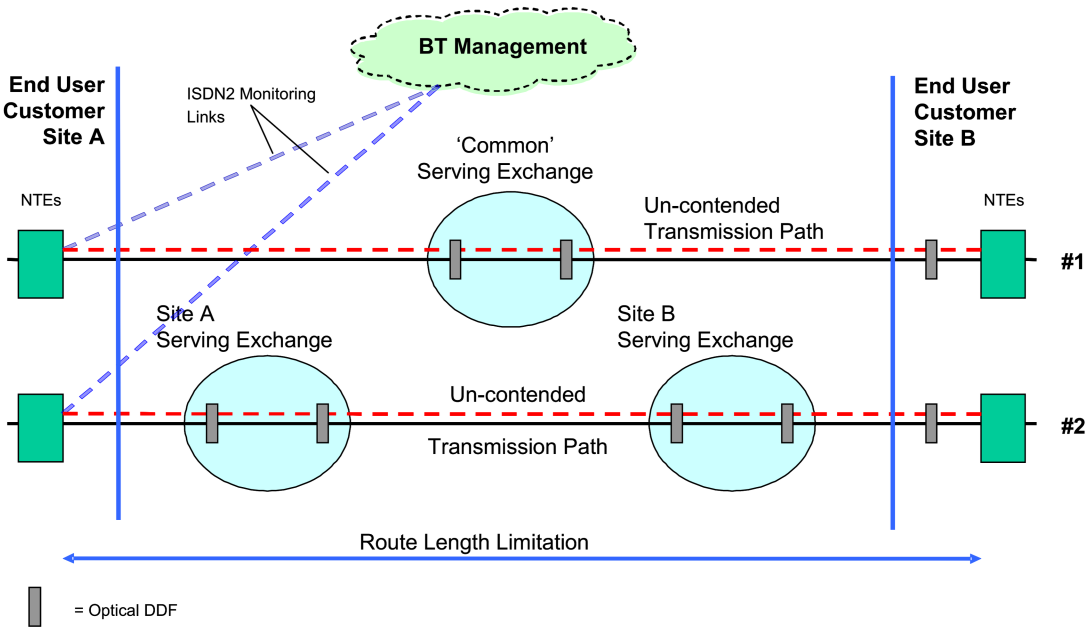

Figure 2. WEES 155 service configuration

Note 3. **Error! Reference source not found.** depicts two separate circuit scenarios, not a combined service. The upper horizontal black line (#1 - NTE to NTE) represents a WEES circuit where both ends have a common serving exchange. The lower line (#2) represents a circuit where the ends are served from different exchanges.

It is envisaged that CP's / customers will use this service for applications using and implementing the technologies of Synchronous Digital Hierarchy (SDH) and Asynchronous Transfer Mode (ATM). Framing and frame structure will be the responsibility of the customer and will be transported transparently.

2.2 Monitoring

The Openreach NTEs are connected to and monitored by the Openreach Network Management Centre and are 'polled' on a regular basis.

It is only possible to monitor the presence of optical conditions and the physical aspects of the NTE, to determine the functional status of each transmission link for maintenance & repair purposes.

3. Customer Interface

3.1 Interface Point

The user interface is presented at the Network Termination Point (NTP), i.e. the point of connection on the Openreach Network Terminating Equipment (NTE) for connecting CPE or CP equipment.

3.2 Connector

The interface connector is physically located on the Openreach NTE in the form of dual optical SC type sockets. A connection is made between the NTE and the CPE/CP equipment by using a suitable patch cable with a plug (male) to make a connection to the Openreach NTE.

The Service offers two types of interface options either 1310nm single-mode or 1300nm multi-mode.

The CP / customer provides a suitable dual SC type patch or interconnection cable between the NTE and the CPE/CP equipment, of either 9/125mm single-mode fibre or 62.5/125mm multi-mode fibre depending on the requested interface type.

The SC type connector conforms to IEC 874-14 [1]. Attention is drawn to the Intellectual Property Rights (IPRs) set out in the preface of this agreed International standard. It is the responsibility of the supplier of the CPE or CP equipment to ensure that they have the necessary rights from the owner of the IPR. The IPR owner has stated that they are willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world.

3.3 Transmission

The single-mode variant of the interface complies with Table 1/G.957, Intra-office, STM-1, of ITU-T Recommendation G.957[2].

The optical fibre presentation at the interface is conformant to (IEC) 60825-1 (2001)[3] & IEC 60825-2 (2000)[4] as a Class 1M Laser Product.

3.4 Openreach NTE Mounting

The Openreach NTE can be mounted within either Openreach or CP / customer supplied equipment cabinets capable of accommodating standard 19 inch mounting practice. Alternatively, the Openreach NTE equipment can be positioned on a suitable horizontal, non-slip surface.

4. Power supply

4.1 General

By placing a order with BT the customer has accepted the conditions placed by BT. In relation to powering of equipment, the customer must comply with the requirements of BS7671 and the details giving within the 'DC Power Planning and Installation Guide for WES-BES Products' document.

The Openreach NTE is locally powered and offers AC or DC power options. The CP will be required to provide either a local 50 Hz AC supply in the form of standard 13 Amp power socket(s); or dual -50V DC power distributions and Earth connections, with all wiring colour schemes conforming to BS7671 (IEEE Wiring Regulations). It will be the customers' responsibility to ensure that the power supply is fused and safe for Openreach to use. These should be in close proximity to the NTE installation location.

4.2 Installation and Testing

In addition to the NTE and Chassis powering requirements below, a spare 50Hz AC mains supply 13 A socket should also be provided in close proximity to the NTEs, to power BT test equipment during both initial commissioning and subsequent maintenance support activities.

4.3 AC Power Connection

AC power connection between Openreach equipment and the power socket will be made using a standard IEC320 C13-14 power lead fitted with a standard 13A plug. The NTE itself has dual power supply units internally, but only requires one AC mains supply socket.

- **For most installations:**
  This will require one mains connection for each NTE provided, and the consumption of the Openreach NTE and power unit chassis in this unmanaged service arrangement will be no more than 30 Watts per NTE.
- **For larger installations (at Openreach discretion):**
  At Openreach's discretion, where a large number of systems of one type are being deployed, a 16-slot NTE chassis version may be deployed. This will require two mains connections for each 16-slot chassis provided. The consumption with a maximum number of 16 service cards provided will be no more than 200 Watts per chassis.

4.4 DC Power Connection

The DC In-Line (Molex) connector is specified as the standard method of connecting DC power by Openreach, and represents the "Demarcation Point" between Openreach and the customer. At their site, the customer is required to provide suitable power and earth connection up to the demarcation point, and be responsible for the supply, wiring and labelling up to the demarcation point. Openreach will not supply or install the DC distribution system as part of the standard Ethernet installation.

- **Customer provided wiring up to the Openreach specified In-Line connector**
  Wiring, MCB isolation or fuse (i.e. C Type MCB or Cartage Fuse), must be provided by the customer, up to and including the DC in-line connector, as per BT's requirements stated within the 'DC Power Planning and Installation Guide for WES-BES Products' document with respect to:

  (i) Correctly rated MCB/Fuse; refer to the WES/WEES product handbook for correct rating
  (ii) Correct labelling of wiring and MCB/fuse positions compliant with BS 7671,
  (iii) Correct size of cable for required voltage drop at required maximum current,
  (iv) Separately fused isolatable A & B power supplies, as detailed in the 'DC Power Planning and Installation Guide for WES-BES Products' document.

  The in-line connector has a maximum current handling capability of 11A, and is not to be used for equipment requiring greater than a 11A supply (such as the Nortel OPTera 5200 equipment, which require 20A feeds).

4.5 Additional Details

For further details on the provision of DC Power, see the 'DC Power Planning and Installation Guide for WES-BES Products' available on the Openreach Ethernet website.

If there is a conflict between DC power information contained in the 'DC Power Planning and Installation Guide for WES-BES Products' and the SIN document, the order of precedence shall be as follows:

(a) DC Power Planning and Installation Guide for WES-BES Products
(b) SIN

5. Further information

For further information please contact your Openreach Sales & Relationship Manager, or see the Openreach site listed on the SINet Useful Contacts page at http://www.btplc.com/sinet/

6. References

[1]	International Electrotechnical Commission 874 /14 - Connectors for Optical Fibres and Cables. Part 14: Sectional Specification for Fibre Optical Connector Type SC.
[2]	ITU-T Recommendation G.957 - Optical interfaces for equipments and systems relating to the synchronous digital hierarchy. June 1999
[3]	(IEC) 60825-1 (2001) Safety of Laser Products Part 1 Equipment classification

[4]	(IEC) 60825 –2 (2000) Safety of Laser Products Part 2 Safety of Optical fibre communications systems.

7. Abbreviations

ATM	Asynchronous Transfer Mode
CP	Communications Provider (Providers of Electronic Communications Services)
CPE	Customer Premises Equipment
DDF	Digital Distribution Frame
IEC	International Electrotechnical Commission
IPRs	Intellectual Property Rights
LAN	Local Area Network
MCB	Mini Circuit Breaker
WES	Wholesale Extension Service
NTE	Network Terminating Equipment
NTP	Network Terminating Point
SDH	Synchronous Digital Hierarchy
SHDS	Short Haul Data Service
SIN	Suppliers Information Note

8. History

Issue 1.0	15 Oct 2004	First Published
Issue 1.1	22 Oct 2004	"Customer" clarified. Figure 1 replaced. Editorial changes. Annex A showing an example of a WES 155 network deleted.
Issue 1.2	29 Sept 2006	Changes made for Equivalence of Input compliant products, including addition of WEES 155.
Issue 1.3	7 Mar 2007	Contact details in "Further Information" clause updated.
Issue 1.4	26 Oct 2007	Service description amended in accordance with updated DC power guidance
Issue 1.5	25 June 2009	Provided clarification on DC power requirements and Link Loss Forwarding. Also minor editorial changes.
Issue 1.6	February 2011	Amended to notify no new service will be made available
Issue 1.7	February 2013	Amended to notify no new supply of Shift, re-arrange, resite or bandwidth upgrade on all WES

		WEES BES (up to 1G/bit) as from 1st June 2013
Issue 1.8	February 2015	Amended to notify End of Support as from 1 April 2018 for all WES WEES BES (up to and including 1Gbits). Change SINet site references from http://www.sinet.bt.com to http://www.btplc.com/sinet/
Issue 1.9	May 2020	Change SINet site references from http://www.btplc.com/sinet/ to https://www.openreach.co.uk/orpg/home/helpandsupport/sins/sins.do
Issue 1.9	September 2021	Product notified end of life. No changes required.
Issue 1.9	October 2022	Product notified end of life. No changes required.
Issue 1.9	October 2023	Product notified end of life. No changes required.
Issue 1.9	October 2025	Product notified end of life. No changes required.

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